

- 13 In the network shown in Fig.6 the switch is opened at $t = 0$. Find $i(t)$ (10)

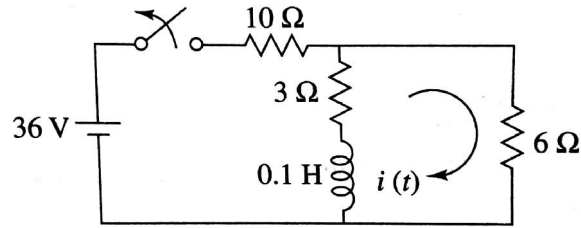


Fig.6

- 14 Figure.7 shows a network with mutual coupling. Find the current in the 10Ω resistance. Assume that inductors have negligible resistance (10)

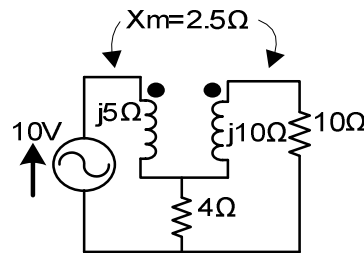


Fig.7

PART D

Answer any two full questions, each carries 10 marks.

- 15 a) Derive the condition for reciprocity and symmetry of Z parameters (5)
 b) Find the transmission parameters for the network shown in Fig.8 (5)

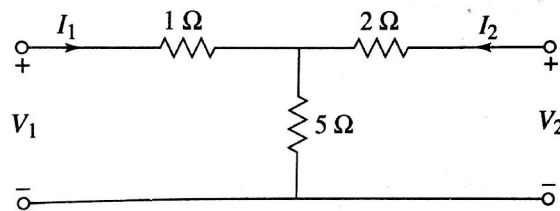


Fig.8

- 16 a) Show that the overall admittance parameter matrix for parallel connected two port network is the sum of admittance parameters of each individual two port network in parallel (5)
 b) Synthesize the network function $Z(s) = \frac{(s^2 + 1)}{s(s^2 + 2)}$ in Foster I form. (5)
- 17 Find the Cauer I and II forms of the RL impedance function $Z(s) = \frac{2(s+1)(s+3)}{(s+2)(s+6)}$ (10)
